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## A RECEIVER FOR WIRED RADIO CENTERS

K. Boreyko

The "Radiotekhaika" Plant has designed a receiver-attachment with fixed coming intended especially for wired radio centers. This attachment replaces the usual broadcast receiver.

The plant has now begun to mass-produce these attachments (called U-207 receivers) for wired centers. Their application greatly simplifies operations was increases the reliability and quality of reception.

The attachment described below can be connected with any wired radio amphiller having a loudspeaker or a line input jack.

## Communic Diagram

The 0-207 receiver is a superheterodyne with fixed tuning. The receivers now being put out by the plant are tuned to three stations, one long-wave and two asdium-wave stations.

The set uses three tubes as follows: a 6A8 as a frequency converter, a 637 se am if amplifier, and a 6Kh6M as a detector. The attachment does not have an audio or rectifier unit; all tubes are supplied from the rectifier of the amplifier.

To increase the selectivity and attenuate the image effect, a band filter 15 tooluded at the receiver input. Changing from one tuning to another is accomplished by a simultaneous shift of the core of the filter and of the oscillator coils. The U-207 receiver has delayed automatic sensitivity control (ARCh). All coils have magnetic iron cores.

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## Electrical Data

The main data on receiving characteristics of the attachment are as follows:

- 1. Sensitivity at an output level of 50 mv for all settings -- not less than 250 microvolts.
- 2. Selectivity when detuned 10 kc for all three stations -- not less than 26 db.
  - 3. Attenuation of image effect -- not less than 60 db.
- $\mu_{*}$  . Frequency pass band during attenuation to half signal strength --  $7 \cdot 10 \ \text{kc}_{\odot}$
- 5. The ARCh action ensures stability of output within 10 db during changes of incoming signal voltage by 100 times.
  - 6. The harmonic factor at an output of 200 mv is less than one percent.
  - 7. The intermediate frequency of the receiver is 468 kc.

It is obvious from this data that the reception properties of this attachment correspond to those of a second-class superheterodyne. Its outstanding feature is the wide pass band which is very important in local station reception. Furthermore, it has low nonlinear and frequency distortion.

Total current consumption for the heater circuit amounts to 1.15 amp, and for the plate circuit,  $14\ \mathrm{ma}$  at 250.

Operating conditions for the tubes are as follows: plate voltage for the 6AB and 6K7, -- 250 v; oscillator plate voltage of the 6AB, -- 1BO v; screen grids of the 6AB and 6K7, -- 90 v; and control grid voltage on the 6AB and 6K7 (hias voltage) 3 v.

## Data on Farts

All the parts of the attachment, except the coils, are standard. All the receiver coils are of the universal type, wound on carbolite frames, 8 mm in diameter. With the aid of the magnetic cores of the coils of the input and oscillator circuits, it is possible to change the tuning of the attachment in the ranges 200-290 m, 390-600 m, and 1,350-2,000 m. It must be borne in mind that the sensitivity of the receiver will be decreased at the extremities of these settings. Therefore, in changing over to these waves, it is advisable to make appropriate changes in the number of turns on the input and oscillator coils.

The attachment is being used on an increasing scale because of its simplicity, reliability, and excellent reception.

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